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Remarks

Claims 1-20 are pending in the application. Claims 5, 15-17 and 20 are currently withdrawn from consideration as being directed towards a non-elected species.

I. CLAIM REJECTIONS UNDER 35 USC § 112, SECOND PARAGRAPH

Claims 1-4, 6-14 and 18-19 are rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The official action states as follows:

Regarding claims 1 and 7, applicant should clarify the specific structure of the passage. Applicant should clarify the structure and mounting of the channel.

The applicants respectfully traverse the rejection of claims 1-4, 6-14 and 18-19 under 35 USC § 112 on the grounds that (a) the official action does not establish that one of ordinary skill in the pertinent art, when reading the claims in light of the supporting specification, would not have been able to ascertain with a reasonable degree of precision and particularity the particular area set out and circumscribed by the claims, and (b) no additional definition of the structure of the passage is needed to enable the person of ordinary skill in the art to ascertain with a reasonable degree of precision and particularity the particular area set out and circumscribed by the claims.

First, in rejecting a claim under the second paragraph of 35 USC § 112, it is incumbent on the Examiner to establish that one of ordinary skill in the pertinent art, when reading the claims in light of the supporting specification, would not have been able to ascertain with a reasonable degree of precision and particularity the particular area set out and circumscribed by the claims. *Ex parte Wu*, 10 USPQ 2d 2031, 2033 (Bd. Pat. Appeals and Interferences 1989) (emphasis added) (citing *In re Moore*, 439 F.2d 1232, 169 USPQ 236 (CCPA 1971)). The applicants respectfully submit that the official action does not indicate how one of ordinary

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skill in the pertinent art, when reading the claims in light of the supporting specification, would not have been able to ascertain with a reasonable degree of precision and particularity the particular area set out and circumscribed by the claims.

Second, the applicants respectfully submit that no additional definition of the structure of the passage is needed to enable one of ordinary skill in the pertinent art, when reading the claims in light of the supporting specification, to ascertain with a reasonable degree of precision and particularity the particular area set out and circumscribed by the claims. The applicants respectfully submit that a person of ordinary skill in the art would be able to determine the scope of the word "passage" from the ordinary meaning of the word as defined in the dictionary. Claims 1 and 7 additionally describe the passage as being "elongate and having a length", and additionally describe the structural relationships between the passage and the channels, the conductive liquid and the latching structure. The applicants respectfully submit that the ordinary meaning of the word "passage", together with the description of the passage set forth in claims 1 and 7 and the description of the structural relationships between the passage and others of the elements recited in claims 1 and 7 are sufficient to enable claims 1-4, 6-14 and 18-19 to meet the requirements of 35 USC § 112, second paragraph, and that no further definition of the structure of the passage is therefore needed.

II. CLAIM REJECTIONS UNDER 35 USC § 103(a)

Claims 1-4, 6-14 and 18-19 are rejected under 35 USC § 103(a) as being unpatentable over United States patent no. 5,912,606 of et al. [Nathanson] in view of United States patent no. 6,501,354 of Gutierrez et al. [Gutierrez].

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings. Second, there

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must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not on applicants' disclosure. (MPEP § 706.02(j)).

The applicants respectfully traverse the rejection of claims 1-4, 6-14 and 18-19 under 35 USC § 103(a) on the grounds that (a) the official action does not set forth a proper motivation for combining the references, (b) no proper reason for combining the references exists, and (c) none of claims 1-4, 6-14 and 18-19 reads on the proposed combination of references.

(a) The official action states:

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the conductive liquid of Nathanson et al. mounted in a cavity, as suggested by Gutierrez et al., for the purpose of preventing unintentional switching.

The applicants respectfully submit that the official action does not indicate where in the cited references may be found the teaching or suggestion to combine the references to solve the problem that faced the inventors before they made the invention and the reasonable expectation of success referred to in MPEP § 706.02(j). Accordingly, the applicants respectfully submit that the official action fails to set forth a proper motivation for combining the references as required by MPEP § 706.02(j).

(b) The applicants have been unable to find anything in the cited references that relates to solving the problem of unintentional switching. The applicants respectfully submit that, without such a suggestion in the references, no proper motivation for combining the references exists, and the proposed combination of references is therefore improper.

Accordingly, the applicants respectfully submit that the rejection of claims 1-4, 6-14 and 18-19 under 35 USC § 103(a) is improper because (a) the official action does not set forth a proper motivation for combining the references, (b) no

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proper reason for combining the references exists.

The applicants further submit that the motivations set forth in the official action based in "obvious design consideration" as also improper because the proposed combination of references on which these "obvious design consideration[s]" are based is improper, for the reasons stated above.

(c) The applicants further submit that the rejection of claims 1-4, 6-14 and 18-19 under 35 USC § 103(a) is improper because none of claims 1-4, 6-14 and 18-19 reads on the proposed combination of references.

The official action states:

Nathanson et al. a latching switching device [figure 1A] comprising:

- an elongated surface having a length;
- first and second conductive support members [34, 36];
- a non-conductive channel [see figure 1A] mounted between the support members;
- a conductive liquid [30, 32] cooperating with the support members; and
- an energy driven latching member [figures 3A-3B] interacting with the conductive liquid.

The applicants respectfully disagree with the reading of Nathanson's disclosure set forth in the official action.

No "elongated surface" is recited in the applicants' claims 1 and 7. Moreover, the official action does not indicate which of the several surfaces shown in Nathanson's Figure 1A is the elongated surface on which an element of the applicants' claim is alleged to read. The applicants' claims 1 and 7 recite "a passage, the passage being elongate and having a length". The applicants respectfully submit that none of the elongated surfaces shown in Nathanson's Figure 1A can accurately be described as "a passage, the passage being elongate and having a length". Moreover, the applicants have been unable to find any element shown in Nathanson's Figure 1A that could accurately be described as "a passage, the passage being elongate and having a length".

No "first and second conductive support members" are recited in the applicants' claims 1 and 7. The applicants' claims 1 and 7 recite "a first cavity and a second cavity." The applicants respectfully submit that Nathanson's elements 34,

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36 (which Nathanson describes as "bonding layers, or pads" (col. 2, line 53)) cannot accurately be described as "cavities." Moreover, the applicants have been unable to find any elements shown in Nathanson's Figure 1A that could accurately be described as "a first cavity and a second cavity".

No "non-conductive channel" is recited in the applicants' claims 1 and 7. The applicants' claims 1 and 7 recite "a channel extending from each cavity to the passage, the channels being spatially separated from one another along the length of the passage" and "non-conductive fluid located the cavities". The applicants respectfully submit that Nathanson's element 24, which Nathanson describes as "a gate member" (col. 2, lines 43-44), cannot accurately be described "a channel extending from each cavity to the passage, the channels being spatially separated from one another along the length of the passage" and "non-conductive fluid located the cavities". The applicants have been unable to find any element shown in Nathanson's Figure 1A that could accurately be described as "a channel extending from each cavity to the passage, the channels being spatially separated from one another along the length of the passage;" and "non-conductive fluid located the cavities".

The official action does not indicate what elements of Nathanson's Figure 1A could accurately be described as "a first electrode and a second electrode in electrical contact with the conductive liquid and located on opposite sides of one of the channels" as recited in the applicants' claims 1 and 7. The applicants respectfully submit that no such elements exist in Nathanson's Figure 1A.

No "energy driven latching member [figures 3A-3B] interacting with the conductive liquid" is recited in the applicants' claims 1 and 7. The applicants' claim 1 recites "a latching structure associated with each channel, each latching structure including energy barriers located in the passage on opposite sides of the channel, the energy barriers interacting with the free surfaces of the conductive liquid to hold the free surfaces apart from one another." The applicants' claim 7 recites "the passage includes a latching structure associated with each channel,

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each latching structure comprising a low surface energy portion of the passage and a high surface energy portion of the passage arranged in tandem along part of the length of the passage with the high surface energy portion closer to the channel, a free surface of the conductive liquid having a lower surface energy in the low surface energy portion than in the high surface energy portion."

Nathanson describes his Figures 3A and 3B as "functionally illustrat[ing] the switch [10 in Figure 1A] in its respective open and closed condition." The applicants respectfully submit that the functional switching arrangement shown in Nathanson's Figures 3A and 3B cannot accurately be described as "a latching structure associated with each channel, each latching structure including energy barriers located in the passage on opposite sides of the channel, the energy barriers interacting with the free surfaces of the conductive liquid to hold the free surfaces apart from one another" as recited in the applicants' claim 1, or "the passage includes a latching structure associated with each channel, each latching structure comprising a low surface energy portion of the passage and a high surface energy portion of the passage arranged in tandem along part of the length of the passage with the high surface energy portion closer to the channel, a free surface of the conductive liquid having a lower surface energy in the low surface energy portion than in the high surface energy portion" as recited in the applicants' claim 7.

Moreover, the applicants have been unable to find any element shown in Nathanson's Figures 1A, 3A and 3B that could accurately be described as "a latching structure associated with each channel, each latching structure including energy barriers located in the passage on opposite sides of the channel, the energy barriers interacting with the free surfaces of the conductive liquid to hold the free surfaces apart from one another" as recited in the applicants' claim 1, or "the passage includes a latching structure associated with each channel, each latching structure comprising a low surface energy portion of the passage and a high surface energy portion of the passage arranged in tandem along part of the length

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of the passage with the high surface energy portion closer to the channel, a free surface of the conductive liquid having a lower surface energy in the low surface energy portion than in the high surface energy portion" as recited in the applicants' claim 7.

Accordingly, the applicants therefore respectfully submit that Nathanson fails to disclose elements that can accurately be described as the passage, the cavities, the channels, the non-conductive fluid, the electrodes and the latching structure recited in the applicants' claim 1 or elements that can accurately be described as the passage, the cavities, the channels, the non-conductive fluid, the electrodes and the latching structure recited in the applicants' claim 7.

The official action further states:

Gutierrez et al. discloses a MEM liquid metal carrying system having a conductive fluid [column 3, lines 1- 18] within a cavity [106].

The applicants note that Gutierrez discloses a microcavity chamber filled with a conductive liquid. However, the applicants respectfully submit that Gutierrez does not disclose any of the above-mentioned elements not disclosed by Nathanson. Accordingly, the applicants respectfully submit that neither of their independent claims 1 and 7 reads on the proposed combination of references, even if the proposed combination of references were proper, and that independent claims 1 and 7 are therefore improperly rejected. The applicants further submit that claims 2-4 and 6 dependent on claim 1, and claims 8-14, 18 and 19 dependent on claim 7 are also improperly rejected because they depend on improperly rejected independent claims 1 and 7.

The official action does not indicate where in the proposed combination of references may be found a disclosure of the additional subject matter claimed in claims 2-4 and 6 dependent on claim 1 and claims 8-14, 18 and 19 dependent on claim 7. The applicants therefore submit that dependent claims 2-4, 6, 8-14, 18 and 19 are improperly rejected for this additional reason.

Accordingly, the applicants respectfully submit that claims 1-4, 6-14, 18

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and 19 are improperly rejected for the reasons set forth above.

The applicants respectfully request reconsideration of the rejected claims. The applicants believe that the application as now amended is in condition for allowance, and respectfully request such favorable action. If any matters remain outstanding in the application, the Examiner is respectfully invited to telephone the applicants' attorney at (650) 485-3015 so that these matters may be resolved.

Respectfully submitted,

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